

Title (en)

PIEZOELECTRIC ELEMENT AND ULTRASOUND SENSOR PROVIDED WITH SAME

Title (de)

PIEZOELEKTRISCHES ELEMENT UND DAMIT AUSGESTATTETER ULTRASCHALLSENSOR

Title (fr)

ÉLÉMENT PIÉZOÉLECTRIQUE ET CAPTEUR À ULTRASONS LE COMPORTANT

Publication

EP 3280156 A4 20181010 (EN)

Application

EP 16772643 A 20160325

Priority

- JP 2015071943 A 20150331
- JP 2016059652 W 20160325

Abstract (en)

[origin: EP3280156A1] A piezoelectric element (50) includes a stack formed of a plurality of piezoelectric layers and having an upper surface (41) as a first main surface and a lower surface (46) as a second main surface facing in opposite directions along a stacking direction, the stack includes a transmission portion (40N), a reception portion (40M), and a separating portion that separates these portions from each other, an electrode (30) as a transmission electrode is arranged so as to cover a region of the first main surface corresponding to the transmission portion (40N), an electrode (10) as a reception electrode is arranged so as to cover a region of the first main surface corresponding to the reception portion (40M), and at least a part of a region of the first main surface corresponding to the separating portion is concave or convex in comparison with a region of the first main surface where the transmission electrode is arranged and a region of the first main surface where the reception electrode is arranged.

IPC 8 full level

H04R 17/00 (2006.01); **B06B 1/06** (2006.01); **H01L 41/053** (2006.01); **H01L 41/08** (2006.01); **H01L 41/083** (2006.01); **H01L 41/09** (2006.01); **H01L 41/113** (2006.01)

CPC (source: EP)

B06B 1/0611 (2013.01); **H04R 17/00** (2013.01); **H10N 30/101** (2024.05); **H10N 30/871** (2023.02); **H10N 30/875** (2023.02)

Citation (search report)

- [Y] JP 2010154371 A 20100708 - HONDA ELECTRONIC
- [Y] JP 2014239238 A 20141218 - KYOCERA CORP
- See also references of WO 2016158762A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 3280156 A1 20180207; **EP 3280156 A4 20181010**; **EP 3280156 B1 20210526**; CN 107211221 A 20170926; CN 107211221 B 20191105; JP 6540796 B2 20190710; JP WO2016158762 A1 20171221; WO 2016158762 A1 20161006

DOCDB simple family (application)

EP 16772643 A 20160325; CN 201680009745 A 20160325; JP 2016059652 W 20160325; JP 2017509910 A 20160325